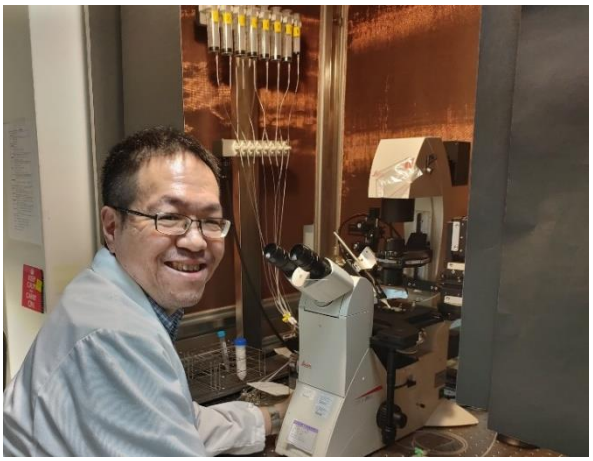

譚俊祥 副教授

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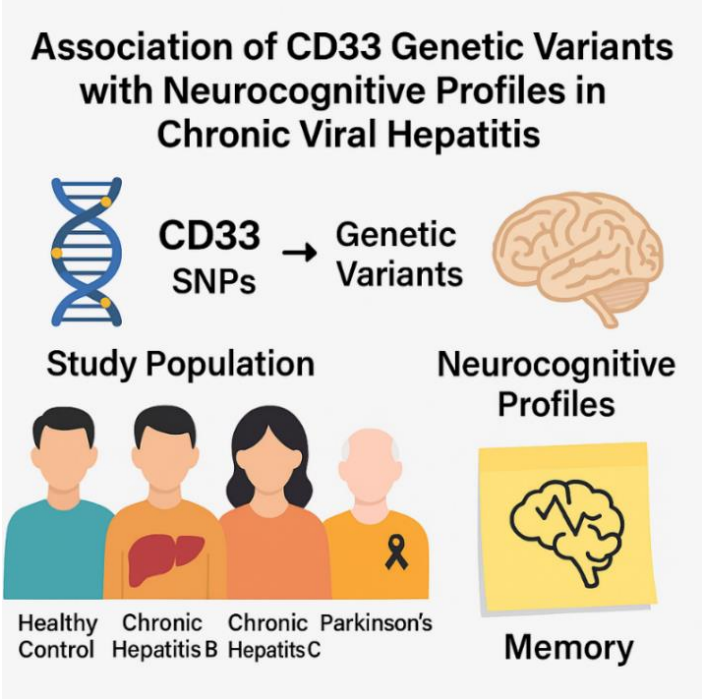
本研究團隊於 2025 年發表於 BJPsych Open 的論文，首次揭示免疫調節基因 CD33 的特定基因變異，會影響慢性 B 型與 C 型肝炎患者的記憶與注意力表現。這項研究整合神經心理測驗與基因定序資料，共納入 563 名受試者，包括健康者、慢性 B 型肝炎、慢性 C 型肝炎以及帕金森氏症患者。結果顯示，CD33 的單核苷酸多型性（SNPs）對健康人與帕金森氏症患者影響不顯著，但在慢性肝炎族群中卻與記憶力下降顯著相關。

研究進一步分析發現，這些基因變異與肝臟慢性發炎指標（FIB-4 值）存在交互作用，顯示體內發炎程度越高，CD33 變異對認知的影響越明顯。這意味著病毒性肝炎所引發的免疫反應，可能強化了 CD33 對腦部功能的干擾。這一結果揭示了慢性肝炎患者可能面臨的隱性認知風險，也為理解感染性疾病與神經退化之間的關聯提供了新視角。

CD33 原被視為阿茲海默症的關鍵風險基因，其功能與免疫細胞清除 β-類澱粉蛋白有關。本研究證實，同樣的基因在慢性肝炎背景下亦會影響記憶表現，顯示免疫與神經之間的連結可能比以往認為的更為緊密。此發現不僅深化了對「身體慢性發炎如何影響大腦」的理解，也為早期偵測病毒性肝炎患者的認知退化風險開啟了新的研究方向。



【具體成果】

- **學術成就**

  114 年發表 3 篇論文於 Neurobiology of Disease、Social Science & Medicine、BJPsych Open。

【研究團隊】

團隊成員：譚俊祥、鄭郁蓁

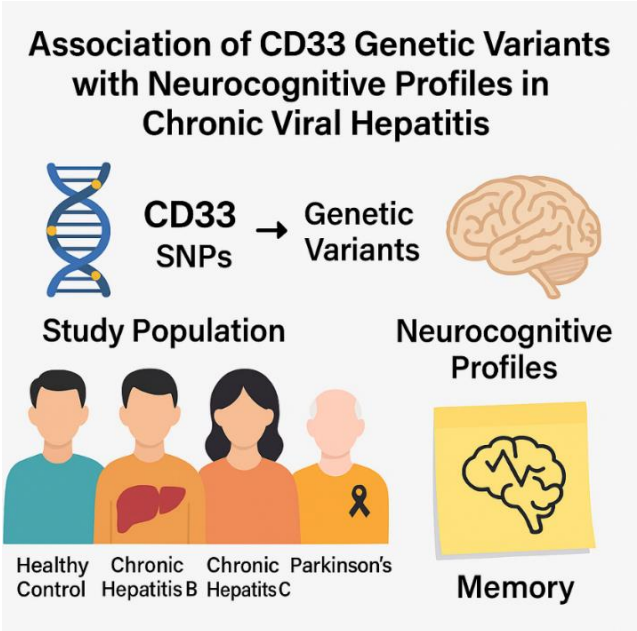
團隊簡介：我們持續於神經科學領域進行溫度感知與神經退化性疾患之研究，期望研究結果能讓人類的知識在相關領域更進一步。

研究聯繫 Email：chtan@kmu.edu.tw

Our research team published a paper in BJPsych Open in 2025, which for the first time revealed that specific genetic variations in the immune-regulating gene CD33 can affect memory and attention performance in patients with chronic hepatitis B and C. This study integrated neuropsychological testing with genomic sequencing data and included 563 participants—healthy controls, individuals with chronic hepatitis B, chronic hepatitis C, and Parkinson's disease. The results showed that CD33 single-nucleotide polymorphisms (SNPs) had no significant cognitive impact on healthy individuals or those with Parkinson's disease, but were significantly associated with memory decline in people with chronic hepatitis.

Further analyses demonstrated that these genetic variants interact with indicators of chronic liver inflammation (FIB-4 index), showing that the higher the level of inflammation, the stronger the effect of CD33 variants on cognitive performance. This suggests that immune reactions triggered by viral hepatitis may amplify CD33's impact on brain function. The findings reveal a potential hidden cognitive risk among chronic hepatitis patients and offer a new perspective on the connection between infectious diseases and neurodegeneration.

CD33 has long been recognized as a key risk gene for Alzheimer's disease, where it influences the ability of immune cells to clear beta-amyloid proteins. This study provides new evidence that the same gene also affects memory performance in the context of chronic hepatitis, suggesting that the links between the immune and nervous systems may be even closer than previously thought. These discoveries deepen our understanding of how chronic inflammation in the body can influence the brain and open new directions for early detection of cognitive decline in patients with viral hepatitis.



【Concrete Results】

- **Academic Achievements**

In 2025, three papers were published in Neurobiology of Disease, Social Science & Medicine, and BJPsych Open.

【Research Team】

Team Member: Chun-Hsiang Tan, Yu-Zhen Zheng

Overview: We are continuously conducting research in the field of neuroscience on thermosensitive mechanisms and neurodegenerative diseases, with the hope that our findings will further advance human knowledge in these fields.

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